United States Department of Agriculture

Natural Resources Conservation Service Plant Guide

GULF CORDGRASS

Spartina spartinae

(Trin.) Merr.ex A.S. Hitchc.

Plant Symbol = SPSP

Common Names: Gulf cordgrass

Scientific Names: *Spartina spartinae*

USDA NRCS Golden Meadow Plant Materials Center Galliano, LA

Description

General: Gulf cordgrass is a stout, native, perennial grass that grows in dense clumps**.** Leaves are long and slender and have a spine-like tip. The inflorescence is a long, slender panicle with tight, erect spikes (Chabreck and Condrey, 1997). Stems to ~ 40 in. (1 m), sometimes to ~ 80 in. (2 m) tall. Spikes of 10 or more grow from the central axis but very closely appressed and overlapping, forming a compact cylindrical to fusiform inflorescence 2 to 6 in. (5-15 cm) long. Spikelets are 0.23 to 0.31 in. (6-8 mm) long with the first glume shorter than the lemma, abruptly narrowed to a short-acuminate tip, the keel and margins smooth to spiny-toothed, and the second glume longer than the lemma, spiny-toothed on the keel, the apex narrowed to a sharp point (Godfrey and Wooten, 1979). It flowers in spring, summer and rarely in fall. It is moderately saline tolerant 0-18 parts per thousand (ppt) and does well in mesic areas. It grows in areas occasionally submerged in water but frequently occurs on upper banks above sea level.

Distribution: Gulf cordgrass grows along the Gulf Coast from Texas to Florida, and South into Eastern Mexico. It is also found along the Caribbean coasts, and inland in Argentina and Paraguay. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site (http://plants.usda.gov/). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

Gulf cordgrass is found in the upper sandier coasts of the Gulf of Mexico, and occasionally in inland marshes, swamps and moist prairies. It prefers coarse and medium, well drained, sandy and sandy loam soils with medium fertility and a pH of 5.5 to 7.5. Gulf cordgrass is shade intolerant, fairly drought tolerant, and grows in areas with annual rainfall ranging from 26 to 63 inches (660 - 1600 mm) (USDA NRCS, 2016).

Uses

Erosion: Gulf cordgrass is an excellent plant for coastal restoration projects. Its large dense clumps allow it to catch and hold sediment, which is beneficial in beach and shoreline stabilization.

Wildlife: Gulf cordgrass provides bird nesting habitat and wildlife cover for wetland margin species. Geese and sandhill cranes are among the species that make use of gulf cordgrass stands. Geese graze the tender shoots during the winter following an early fall burn (Leithead et al., 1971). Mottled ducks are also known to nest in dense clumps (https://houstonaudubon.org/sanctuaries/bolivar-flats/bolivar/gulf-cordgrass.html).

Forage: Gulf cordgrass can also be a good food source for cattle. Prescribed burning has shown to improve diet quality during winter and early spring (Angell, 1986). The regrowth is tender and palatable to livestock, but older mature plants are too tough even for horses.

Status

Wetland Indicator: Gulf cordgrass is considered an obligate plant in the Atlantic and Gulf Coastal Plain (USDA, NRCS, 2016).

Weedy or Invasive: This plant is a native species that may displace desirable vegetation in planned landscapes if not properly managed. Please consult with your local Natural Resources Conservation Service (NRCS) Field Office, Cooperative Extension Service office, state department of natural resources, or state agriculture department regarding its status and use.

Please consult the PLANTS Web site (http://plants.usda.gov/) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Planting Guidelines

Establish gulf cordgrass from container grown or from bare root stock. The presence of a well-developed root mass and growing buds are critical to transplant survival. Containerized plants are recommended for high impact areas or bare root stock for mild impact areas with little or no wave energy. Bare root material typically contains 5 to 8 healthy stems per planting unit while container grown materials have greater than 8 healthy stems per planting unit. Since most marsh sites are irregular in size, and often difficult to access, hand planting using dibbles, planting bars, or garden shovels works effectively. A tractor drawn, mechanical transplanter is ideal for areas with level terrain and where soils are conducive for this kind of planting. The Golden Meadow Plant Materials Center has been successful in using 36 to 60 in. (0.9 to 1.5 m) plant spacings, but spacings may vary depending on the resource concern. Transplant propagules into moist soil approximately 3 to 6 in. (~7.6 to 15 cm) deep. It is desirable to plant in isolated areas as possible to avoid other plant competition because of the lengthy time of establishment (Craig, 1991). It is not necessary to fertilize once the plant is established; however, a slow release fertilizer enhances plant survival at transplanting. The Golden Meadow Plant Materials Center uses the following fertilizer products for greenhouse production and conservation plantings based on recommended manufacture rates: Agriform® 20-10-5 at one 21-gram tablet/trade one-gallon container or field transplants and Osmocote® Plus 15-9-12 at 20-gram tablet s/trade one-gallon container or field transplants.

Gulf cordgrass can also be established from seed. Begin seedbed preparation in advance of planting. Plant seed in late fall or spring. Prepare a seedbed by disking and firming the soil prior to broadcasting the seed or use herbicides or mowing to manage plant residue prior to planting seed no-till. Avoid tillage on saline or sodic soils. Gulf cordgrass is best seeded using a native grass drill. Use broadcast seeding in areas not easily planted with a drill, but additional seed coverage such as culti-packing will ensure good seed-to-soil contact. Plant seed ⅛ to ¼ in. (~3 to 6 mm) deep. It is better to plant too shallow than too deep. For calibration purposes, gulf cordgrass contains approximately 454,000 seeds per pound. A seeding rate of 4 pounds pure live seed (PLS) per acre is recommended (40 seed per square foot). If included in seed mixes, reduce the seeding rate to the desired percentage of gulf cordgrass in the seed mix.

Management

Gulf cordgrass is typically managed by burning, mowing, or by applying a broad-spectrum herbicide labeled for the control of broadleaves. Contact your local extension weed specialist for herbicide recommendations.

Understanding site hydrology is important for managing stands of gulf cordgrass. It will tolerate fluctuating water levels of salinity, but prolonged and elevated levels of salinity, poor water circulation, and high-water temperatures may affect overall plant health and vigor (Leithead et al., 1971).

There are several publications on management of gulf cordgrass in the South Texas Plains by prescribed burning and timely grazing in late fall and early spring (Garza et al., 1994; Haynes et al., 2018; McAtee et al., 1979, Scifres and Drawe, 1980; Scifres et al.,1980).

Pests and Potential Problems
Gulf cordgrass has no observed potential pest when grown in Louisiana or Texas and has no known allelopathic effects or toxicity (USDA, NRCS, 2016).

Environmental Concerns
Gulf cordgrass is a native grass species and its escape from planted areas would not be considered hazardous or detrimental to the natural landscape.

Control
Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method.

Seeds and Plant Production
Plants are propagated from divisions of stems and roots. Container grown or bare root stock can be planted year-round, however, better results are achieved by planting mid-winter to early spring. The Golden Meadow Plant Materials Center uses one-gallon containers with a potting medium containing a 50:50 ratio of peat moss and pine bark for production of transplants for increase and conservation plantings. Plant survival is high when grown in a greenhouse. Production fields at the Golden Meadow Plant Materials Center are established from transplants spaced on 36 to 60 in. (.91-1.52 m) centers in linear rows and uses a rotary tiller to control weeds and maintain plants as individual clumps. If planted on bedded rows, a small root plow can easily extract the plants and then divided for field transplanting.

A Woodward Flail-Vac Seed Stripper (Ag-renewal, Inc., Weatherford, OK) or other brush harvester can collect the ripe seed crop without damaging or eliminating the ability to make subsequent harvests of the stand as later flowering florets mature. For optimum harvesting efficiency, operate Flail-Vac harvester with the tractor at 1500 rpm and the ground speed range from 2.5 – 4 mph. This setting results in relatively clean seed. Handpicking the stems and chaff from the harvest further cleans the seed or run the seed through a Westrup brush machine (Westrup, Slagelse Denmark) and then through a Clipper seed cleaner (A.T. Farrell, Bluffton, IN).

Gulf cordgrass seed is harvested one time per year in July or August. Harvests have ranged from 20-65% active seed germination. Seed is used for field planting or production of transplants.

Cultivars, Improved, and Selected Materials (and area of origin)
Select cultivars based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension, or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

West Bay Germplasm was released in 2020 by the USDA NRCS Golden Meadow Plant Materials Center, Galliano, Louisiana as a selected class germplasm. West Bay Germplasm originated from Brazoria County Texas. It is a vegetatively propagated selection that has seed germination greater than 20% to promote spread by seed as well as vegetatively. It is recommended for coastal stabilization in Louisiana and Southeast Texas.

Literature Cited

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Citation

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